

Oral Health Status of Children with Autism in Bangladesh

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ABSTRACT

Background:Autism is a lifelong neurodevelopmental disorder.The oral health status of children with autism worldwide has been found to be poor for a variety of reasons. Because of the difficulty coaches and parents have in brushing their children's teeth, these patients are expected to be at increased risk of tooth decay and gingivitis from improper brushing and flossing. Because of their poor tongue coordination, they tend to put food in their mouth instead of swallowing it, making them more susceptible to tooth decay. Communication and behaviour problems are the biggest challenges in oral care. **Objective:**The aim of this study was to estimate the Oral Health Status of children with Autism in Bangladesh. **Methods:** This case control studywas carried out at dental department of K.G.H Dhaka, Bangladesh,included total of 61 children having ASD coming from outdoor patient, aged range 6-13 years were taken as cases from K.G.Hduring July 2018 to December 2018. Data was collected by researcher himself with using a prepared structured questionnaire & checklist and analyzed on Statistical Packages for Social Science (SPSS-24).**Results:** The total study population was 61 children with autism aged 6 – 13 years, (50.81%) were 6-8 years, (37.7%) were 9-11 years and (11.47%) were 12-13 years. And sex distribution of the children where, 40(65.57%) were boys and 21(34.43%) were girls.**Conclusion:** No data are currently available on the oral health of children with autism in Bangladesh. Therefore, it is difficult to compare children with autism with those in the healthy group. Plan and provide effective dental health services for children with autism disorders.

Keywords: Autism, Oral, Gingivitis, Flossing.

I. INTRODUCTION

Autism spectrum disorder is a complex developmental condition that involves persistent challenges in social interaction speech & nonverbal communication as well as in restricted and repetitive behavior. It is more common in male than in females usually and first diagnosed in early childhood (around 2 or 3 years old) when many of the most obvious symptoms occur. Autism affects many parts of the brain how this occurs is not understood. It is a highly variable brain development disorder. Symptoms gradually begin after the age of six months become estimated by age two or three years and tend to continue three years through adulthood. This complex developmental disability impairs communication social behavioral and intellectual functioning. Some may express abnormal emotional and linguistic development as well as visual & hearing impairment. According to data from the KGH. ASD prevalence was significantly higher in boys (26.6 per 1000). than in girls (6.6 per 1000). The overall estimated ASD prevalence for Asian/ pacific islander children was 13.5 per 1000.

Autism is defined as a complex developmental disorder that usually occurs during the first three years of life. This is the result of neurological disorders that affect the normal functioning of the brain and affect development in the areas of social interaction and communication skills. [1] There is no cure. [2] Autism spectrum also known as autism spectrum disorders (ASD), are a group of neurodevelopmental psychiatric disorders. People on the autism spectrum often have difficulty communicating and interacting socially and may exhibit restricted and repetitive patterns of behavior, interests, and activities. Symptoms are usually recognized between the age of 1 and 2 years. [3] The genetics of autism are complex, but autism is highly heritable. It is a neurodevelopmental disorder characterized by impaired social interaction, impaired communication, and restricted repetitive or stereotyped behavior in the child's availability of assessment and diagnostic services. [4]

Populations with (ASD) have the same health problems as the typical population, but they may be caused by poor dietary preferences. Because of certain behaviors and certain aversions, this population is at increased risk and more prone to developing chronic non-communicable oral health conditions. The increasing prevalence of ASD and the fact that this population is one of the most affected countries has increased their concern about their oral health problems, which is Consistent with one of the global oral health goals of promoting good health. People with special needs may have mobility, sensory or intellectual autism and may have significant limitations in oral hygiene. [5-7] These conditions can make affected children more susceptible to oral disease and make dental care difficult. [8] These children also have common harmful oral habits such as teeth grinding, tongue thrusting, gum picking and lip biting. [9] Some studies have reported higher prevalence of caries, gingivitis, and worse oral hygiene compared with non-autistic subjects, [10] but others studies report no difference in oral health between autistic and control subjects. In some cases, children with autism may even have a relatively low rate of tooth decay. Children with mental or physical autism generally have several common health problems associated with them in addition to their underlying medical conditions, so these children. Maintaining optimal oral and dental health is of utmost importance. Moreover, previous reports on this group of people in our community have shown that they have unmet needs, especially periodontal needs. [11] Poor dental health not only impacts the overall health of children, but can also increase negative social interactions with children. [12]

Several studies have reported a higher prevalence of caries, gingivitis, and poorer oral hygiene in comparison with non-autistic individuals. [13] Few studies over the past show a higher rate of oral diseases among the autistic patients. Lack of this important data is a serious limitation to oral health comparison of children with autism and healthy children. It is also important to understand the disease pattern of both male and female children with autistic disorder for planning and providing effective dental health care services. The purpose of this study was to examine the oral lesions and dental status of autistic children as compared to the non-autistic children in Bangladesh.

II. METHODS

This is a case control study. The study was carried out in the outdoor ODPpatientsin the dental department of Kurmitola General HospitalDhaka, Bangladesh. The duration of the period fromJuly 2018 to December 2018.This study was carried out included total of 61 children having ASD coming from outdoor patient agedrange 6-13 years were taken as cases from Kurmitola General Hospital Dhaka, Bangladesh. And this study is group between autism patients 33(54.09) & healthy control 28(45.91).Consent for examining the children was obtained from the parents and respective head mantel. The data for this study about had been accumulated from patients' medical information and radiographs. Statistical evaluation of the results used to be got via the use of a window-based computer software program devised with Statistical Packages for Social Sciences (SPSS-24).

III. RESULTS

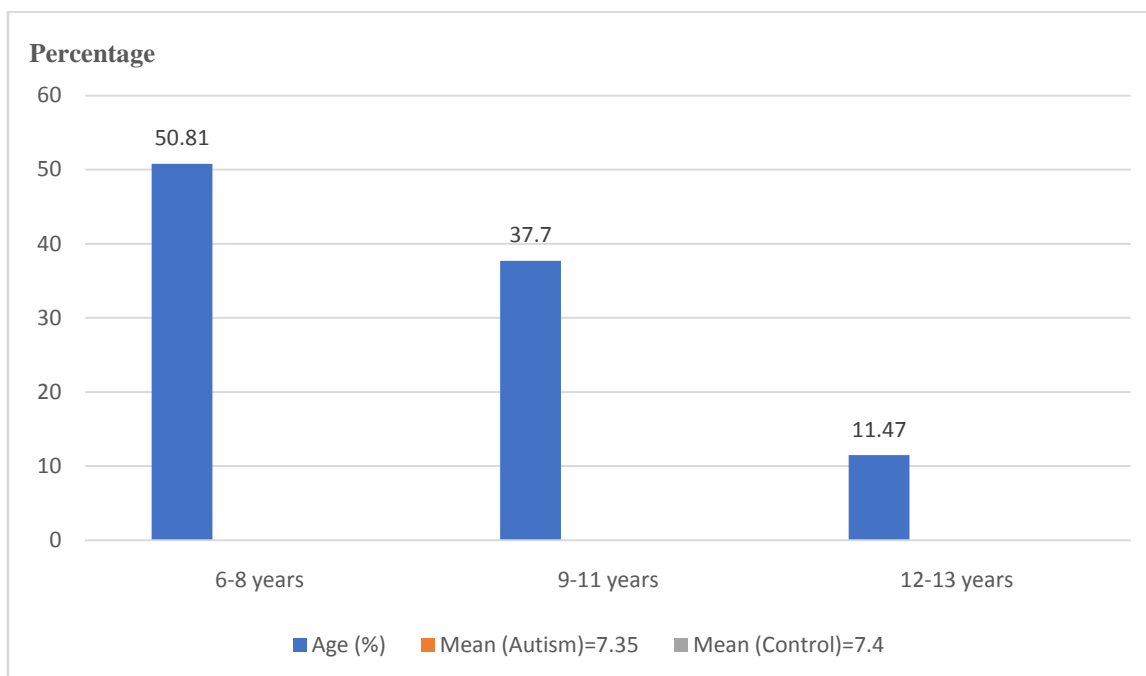


Figure I: Distribution of the study according to age

The mean age of autism patients (7.35) years & healthy controls (7.4) years was very similar. The overall prevalence of dental caries autistic among the children was 54.09%, (33/61) where for the healthy control was 46.0% (28/61) (Figure 1). The difference in carious prevalence was significant both the two groups.

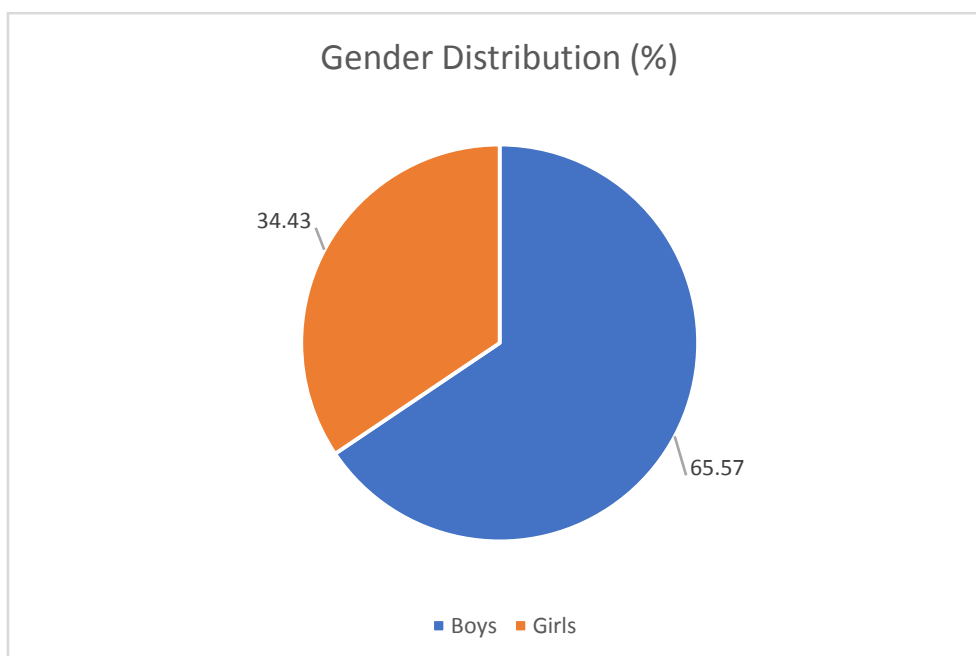


Figure II: Distribution of the study according to gender distribution

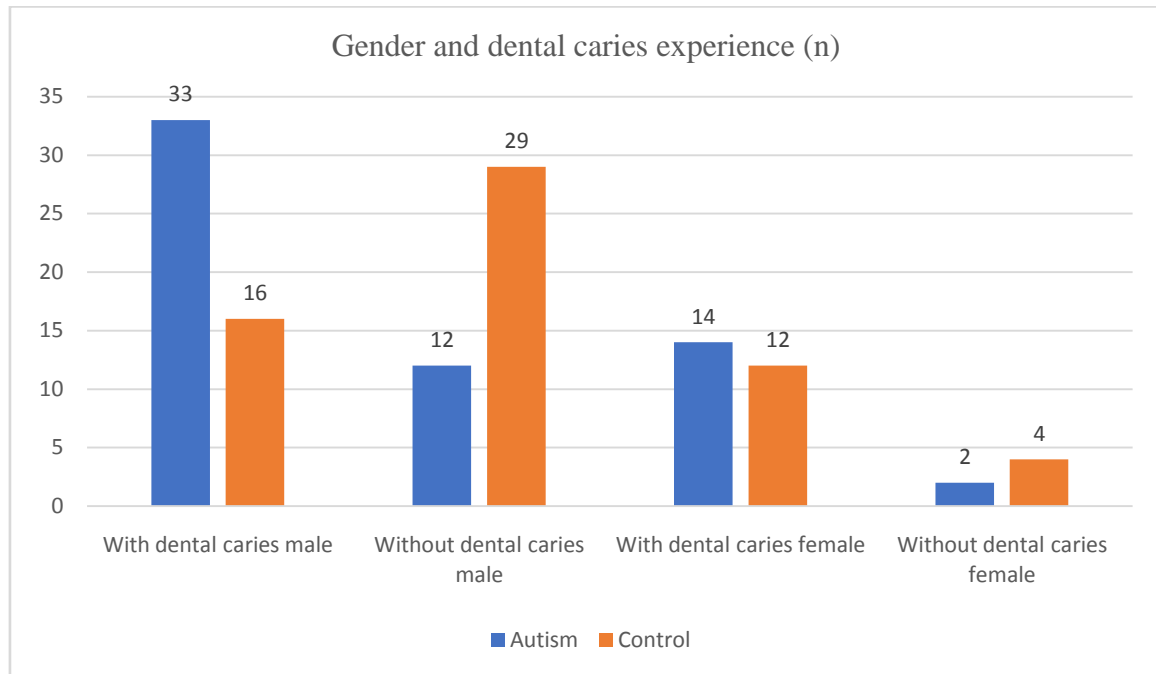
The study group comprised of 61 autistic children, 40(65.57%) boys & 21(34.43) girls with a male to female ratio of 1.9: | aged 6 to 13 years.

Table 1- Mean decayed, missing and tilled teeth (dmf DMFT) scores of the autism group and healthy control subjects. Data are presented as mean ± standard deviation gender.

	Autistic patients	Control	P value
dmf	0.8±0.20	0.3±0.3	<0.05
DMFT	1.6±0.64	0.6±0.29	
	Autistic Female	Autistic Male	
dmf	0.65±1.4	0.75±1.5	<0.05

DMFT	0.50±0.49	0.49±0.52	
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For the Children e-autism the values of the DMFT/dmf are presented in table 1. The mean dmf of the autistic group was 0.80±0.2.0 while that of the controls was 0.30+ 0.3 The mean DMFT of the autistic group was 1.6±0.64 and 0.6±0.29 in the controls (P<0.05). There was also no significant difference: between male and female. The percentage of decayed, missing and filled teeth increased with advancing age.



Met Need Index (MNI) and Restorative Index (RI) and treatment need the mean DMFT/dmf for the 2 groups. The overall means DMFT/dmf for autistic patients was 2.4 and for healthy control 0.9. The treatment received and restorative care of those autistic children who have suffered the disease. The RI for autistic group was 0.02 and MNI was 0.09. RI for control group was 0.05 was found and MNI was 0.3 as 7 children had extraction done previously and 1 had amalgam restoration. As for the treatment need of the study population, all of autistic children required oral prophylaxis, compared with 25 (41%) of controls. 47 (77.0%) autistic children and 28 (46.0%) controls also required restorative treatment.

A total of 36 (59.0%) individuals in the control group had good oral hygiene, compared with 2 (3.3%) of the autism group. The majority of the autistic children either having poor 59.0% (36/61) or fair 37.8% (23/61) oral hygiene compared with healthy control subjects. As for the gingival status evaluation the results showed that 97.0% (59/61) of the autistic children had gingivitis which is generalized in 78.0% of the examined children or localized in 22.0% of the cases.

IV. DISCUSSION

Oral disease is one of the most common health problems for people with autism. This group has a higher prevalence and severity of oral disease compared to the general population. [14] Because of their low physical abilities and the consequent difficulty in maintaining oral hygiene, these people have poor oral hygiene. [15] Calculus and bleeding gums compromised oral hygiene in most study participants, but there were no significant differences between types of impairment. A number of studies have reported similar results, which are believed to be due to improper brushing technique and inadequate knowledge of oral hygiene practices, despite extensive parental attention. [16] A study by Altun et al. reported similar results. Made in Turkey. [17] Her Gizanie et al. study of 136 autism people and her 12-year-old children with autism in Belgium found that 31.8% of children had poor oral hygiene, with large differences depending on the type of disability. Several other studies have also found poorer periodontal health and oral cleanliness outcomes in children with autism. These consequences may be due to reduced physical performance, which may make it difficult for children with autism to brush their teeth. [18]

In the previous National Health Insurance (NHI) survey in 2004, the mean Deft/DMFT index for CSHCN ages 3-12 was 3.25. [19] A similar study by Hsiao (2007) among school children with autism in Kaohsiung Country gave a mean value of 4.0. [20] Oral disease remains a major health concern in CSHCN due to physical incapacity, reliance on caregivers, and inappropriate behaviour during see dentist. [21] CSHCN hospitalized for dental care tended to have more complex dental problems and worse oral health than patients receiving regular preventive dental care at local clinics and day care facilities. Our results were similar to those of the Stankovastudy, which examined 2125-year-old autism children treated under general anesthesia between 2006 and 2008. [22] The mean DMFT index of patients in this study was 11.05 ± 4.82 . These results may provide compelling evidence that patients undergoing hospital care suffer from poor oral hygiene. Pharmacological behavioral management such as general anesthesia and sedation is essential for complete oral rehabilitation. In our study, the total study population is 61 autistic children where 40 (65.57%) boys & 21 (34.43) girls. And The autism group had a mean Dmft of $0.80 \pm 0.2.0$, while the control group had a mean Dmft of 0.30 ± 0.3 . Mean DMFT in the autism group was 1.6 ± 0.64 and in the control group was 0.6 ± 0.29 ($P < 0.05$). Also, there was no significant difference between girls and boys. The proportion of carious teeth, missing teeth, and filled teeth increased with age.

Medical centers in Taiwan have implemented numerous pharmacological approaches to treat dental problems in CSHCN. National Taiwan University Hospital (NTUH) conducted an analysis of people with autism undergoing dental treatment under sedation in a day care ward. [23] In 1999, 374 persons with autism ranging in age from 3 to 46 with an average age of 14.2 were selected. The average number of dental treatments per person was 6.1 teeth and the average treatment time was less than 1 hour. CSHCN may have dental treatments several times a year, but this is very different from our treatment approach of longer operative times and all necessary treatments. Another study conducted from 2001 to 2007 at Tri Service General Hospital (TSGH) included 25 persons with autism with an average age of 11.7 years. Dental treatment was performed under general anesthesia and the mean number of treated teeth was 21.5.

At a developing age, young children may have physical autism that make it difficult to access proper dental care and a family dentist. After 6 years of age, deciduous tooth loss and permanent tooth replacement lead to a decline in dmft/DMFT index until 12 years of age. After age 12, caries prevalence and her DMFT index increase each year. Our findings are in strong agreement with other Taiwanese studies. [24] However, national surveys in the United States found the opposite, showing that children over the age of 6 have more time to develop dental problems that require medical intervention and are more likely to have more complex and unmet dental needs. [25]

Contrary to our hypothesis that children with severe autism or certain types of autism, such as autism, have more unmet dental needs, we did not observe significant differences in deft/DMFT index and dental treatment modalities by disability type and severity. This may be due to the hospital's case selection and referral only to patients with multiple dental problems and lacking cooperative skills for advanced medical interventions. Huang's National Survey of Persons with Autism found that people with severe-to-severe autism had significantly more missing teeth and fewer teeth being replaced than those with mild autism. [26] This suggests that severely affected individuals are less likely to receive timely dental care. Her CSHCN under the age of 12 years with multiple autism and intellectual disability was observed to have more caries and lower filling rates compared to other types of autism. [27]

Limitation of the study

The present study was conducted in a very short period due to time constraints and funding limitations. The small sample size was also a limitation of the present study.

V. CONCLUSION

Children with autism require special dental care to improve their oral health through effective oral hygiene. Surveys should also be conducted in peri-urban and rural areas. Parents, general dentists, and periodontists can help people with autism develop skills over time and lead more productive, independent lives through continued repetition and perseverance. Efforts should be made to teach oral hygiene to children.

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DECLARATION

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Conflict of interest: None declared.

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